2023-06480 - Data science engineer - Statistical learning for prediction of the response to immunotherapy in lung cancer

Renewable contract: Yes
Level of qualifications required: Graduate degree or equivalent
Other valued qualifications: PhD thesis
Function: Temporary scientific engineer

About the research centre or Inria department

The Inria centre at Université Côte d’Azur includes 37 research teams and 8 support services. The centre’s staff (about 500 people) is made up of scientists of different nationalities, engineers, technicians and administrative staff. The teams are mainly located on the university campuses of Sophia Antipolis and Nice as well as Montpellier, in close collaboration with research and higher education laboratories and establishments (Université Côte d’Azur, CNRS, INRAE, INSERM...), but also with the region’s economic players.

With a presence in the fields of computational neuroscience and biology, data science and modeling, software engineering and certification, as well as collaborative robotics, the Inria Centre at Université Côte d’Azur is a major player in terms of scientific excellence through its results and collaborations at both European and international levels.

Context

The engineer position will take place in the environment of a newly created Inria-Inserm team COMPO (COMputational Pharmacology in Oncology), located in the La Timone health campus. The team is composed of mathematicians, data scientists, pharmacists and clinicians and is a unique multidisciplinary environment focused on developing novel computational tools for decision-making in clinical oncology.

Specifically, the project is funded by the french National Cancer Institute (INCa) and will consist in developing mechanistic models of the response to immune-checkpoint inhibitors (ICI) with access to unique, large-scale (450 patients), longitudinal and multi-modal biological data generated by the PIONeER consortium clinical study (RHU program). It will involve strong interactions with clinicians from APHM and biologists, from academy (CIML and CRCM in Marseille) as well as biotech (e.g. Veracyte) and pharma companies (InnatePharma, Imcheck therapeutics).

Assignment

The recruited person will be in charge of the biostatistical analysis and machine learning engineering of biomarker data of the response to ICI in non-small cell lung cancer. To this end, large data sets containing multi-modal and longitudinal data from immune-histochemistry, imaging, pharmacokinetics, immunoprofiling, soluble biomarkers and sequencing data (including circulating DNA) will be used.

Main activities

Main activities:
- Data exploration and visualization
- Biostatistics (e.g. statistical tests, survival analysis)
- Statistical reporting (notebooks, apps (e.g., shiny))
- Machine learning (unsupervised and supervised)

Additional activities:
- Review the literature
- Analyze the requirements of the project partners
- Write synthetic and meaningful reports and scientific publications

Skills

Technical skills and level required:
- Excellent programming skills (R/python)
- Familiarity with real-world data analysis
- Strong background in statistics
- Ideally, experience in mixed-effects modeling

Benefits package

- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage

General Information

- Theme/Domain: Computational Neuroscience and Medicine
- Statistics (Big data) (BAP E)
- Town/city: Marseille
- Inria Center: Centre Inria d’Université Côte d’Azur
- Starting date: 2023-09-01
- Duration of contract: 2 years
- Deadline to apply: 2023-07-31

Contacts

- Inria Team: COMPO
- Recruiter: Benoît Sébastien / Benoît.Benzécri@inria.fr

About Inria

Inria is the French national research institute dedicated to digital science and technology. It employs 2,600 people. Its 200 agile project teams, generally run jointly with academic partners, include more than 3,500 scientists and engineers working to meet the challenges of digital technology, often at the interface with other disciplines. The Institute also employs numerous talents in over forty different professions. 900 research support staff contribute to the preparation and development of scientific and entrepreneurial projects that have a worldwide impact.

The keys to success

Strong motivation to apply computational methods to concrete health problems

Instruction to apply

Defence Security: This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST). Authorisation to enter an area is granted by the director of the
Remuneration

From 2652 euros gross monthly (according to degree and experience)

unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

Recruitment Policy:
As part of its diversity policy, all Inria positions are accessible to people with disabilities.